BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 92-006-E - ORDER NO. 92-1011

DECEMBER 1, 1992

IN RE: Adjustment of Base Rates for Fuel Costs for Duke Power Company	)	ORDER APPROVING BASE RATES FOR FUEL COSTS

On November 19, 1992, the Public Service Commission of South Carolina (the Commission) held a public hearing on the issue of the recovery of the costs of fuel used in electric generation by Duke Power Company (the Company) to provide service to its South Carolina retail electric customers. The procedure followed by the Commission is set forth in S.C. Code Ann., §58-27-865 (Cum. Supp. 1991). The review in this case is from June, 1992 through November, 1992.

At the public hearing, William F. Austin, Esquire, and Karol P. Mack, Esquire, represented the Company; Nancy Vaughn Coombs, Esquire, represented the Intervenor, the Consumer Advocate of South Carolina; and Marsha A. Ward, General Counsel, represented the Commission Staff. The record before the Commission consists of the testimony of two witnesses on behalf of the Company, three witnesses on behalf of the Commission Staff, and six hearing exhibits.

Based upon the evidence of the record, the Commission makes the following findings of fact and conclusions of law:

FINDINGS OF FACT

1. The record of this proceeding indicates that for the period from April 1992 through September 1992 the Company's actual total fuel costs for its electric operations amounted to $365,930,341. Hearing Exhibit No. 6, Accounting Exhibit E.

2. Staff reviewed and compiled a percentage generation mix statistic sheet for the Company's fossil, nuclear and hydraulic plants for April 1992 through September 1992. The fossil generation ranged from a high of 50% in August to a low of 14% in April. The nuclear generation ranged from a high of 84% in April to a low of 49% in August. The percentage of generation by hydro ranged from 1% to 4% for this period. Hearing Exhibit No. 6; Electric Department Exhibit No. 3.

3. During the April 1992 through September 1992 period, coal suppliers delivered 5,495,535 tons of coal at a weighted average received cost per ton of $43.39. The Commission Staff's audit of the Company's actual fuel procurement activities demonstrated that the average monthly received cost of contract coal varied from $43.94 per ton in May to $49.20 per ton in June. Hearing Exhibit No. 6, Accounting Exhibit A.

4. According to Company witness William R. Stimart, the performance of the Company's nuclear units equals or exceeds that of comparable facilities as demonstrated thusly:

Duke system actual capacity factors -

April 1992-September 1992	78%	2 units refueled
October 1991-March 1992	69%	4 units refueled
12 months ended September 1992	73%	
Calendar 1991	80%	

National average capacity factors -

NERC data for PWR's	
Calendar 1991	73%
5 year 1987-1991	68%

5. Staff collected and reviewed certain generation statistics of major Company plants for the six months ending September 30, 1992. Hearing Exhibit No. 6, Electric Department Exhibit 4. The nuclear fueled Oconee Plant was lowest at 0.52 cents per kilowatt-hour. The highest amount of generation was 9,164,353 megawatt-hours produced at the same Oconee station.

6. According to Staff witnesses A.R. Watts and Gary E. Walsh, Duke's equivalent availability of its base load fossil units exceeded 98% for a majority of the months of April through September; its nuclear units achieved a 78% capacity factor for the twelve months ending September, 1992 compared to the North American Electric Reliability Council's (NERC) average of 73% for the year 1991 for Pressurized Water Reactor Units; and approximately 49%-84% of the Company's electric generation was produced by Duke's nuclear units which represent approximately 35% of the Company's installed plant capacity.

7. The Commission Staff conducted an extensive review and audit of the Company's fuel purchasing practices and procedures for

the subject period. The Staff's accounting witness, Jacqueline R. Cherry, testified that the Company's fuel costs were supported by the Company's books and records. Testimony of Cherry; Hearing Exhibit No. 6, Accounting Department Exhibits.

8. The Commission recognizes that the approval of the currently effective methodology for recognition of the Company's fuel costs requires the use of anticipated or projected costs of fuel. The Commission further recognizes the fact inherent in the utilization of a projected average fuel cost for the establishment of the fuel component in the Company's base rates that variations between the actual costs of fuel and projected costs of fuel would occur during the period and would likely exist at the conclusion of the period. Section 58-27-865, supra, establishes a procedure whereby the difference between the base rate fuel charges and the actual fuel costs would be accounted for by booking through deferred fuel expenses with a corresponding debit or credit.

9. The record of this proceeding indicates that the comparison of the Company's fuel revenues and expenses for the period April 1992 through September 1992 produces an over-recovery of $10,407,389 through September 1992. Staff added the projected under-recovery for October, 1992 of $3,081,764 and the projected under-recovery for November, 1992 of $2,383,541 to arrive at an over-recovery of $4,942,084. Cherry testimony, p. 3.

10. The Company's projected average fuel expense for the December, 1992 through May, 1993 period is 1.1236 cents per KWH. However, when adjusted by the cumulative variance of fuel cost

recovery, the adjusted fuel costs are 1.0708 cents per KWH. Stimart testimony, p. 11.

11. Company witness Stimart proposed that the fuel component in base rates of 0.95 cent/KWH be continued effective December, 1992. Stimart testimony, p. 12.

12. Staff witness Watts testified that using the currently projected sales and fuel cost figures through May 1993, and a projected cumulative over-recovery of $4,942,084 through November, 1992, the average projected fuel expense is approximately 1.0718¢/KWH for the six months ending May, 1993. The currently approved base fuel factor is 0.9500¢/KWH. If the base fuel component remains at 0.950¢/KWH for this period, it will produce an estimated under-recovery of $11,401,880. Testimony of Watts, p. 6; Hearing Exhibit No. 6, Electric Department Exhibit 10.

13. Staff proposed this fuel factor of 0.950¢/KWH so that fluctuations in the fuel factor will be limited over the long term. This recommendation will further maintain rate stability and maintain a relative balance between actual and projected fuel costs and sales.

14. During the period under review, Oconee Unit 3 and Catawba Unit 1 were down for refueling during some portion of the time. Other scheduled and/or forced outages occurred during this time frame at these and the Company's other nuclear units. All outages were reviewed by Staff (Hearing Exhibit No. 6, Electric Department Exhibit 2A) and a determination was made by Staff as to the prudence of the outages. In total, two outages experienced by the

Company were determined by the Staff to be the result of unreasonable actions by the Company. However, because of the Company's overall plant performance during the period, the Staff did not recommend that the resulting excess fuel replacement costs be disallowed.[1]

OCONEE UNIT 1

15. Staff witness Watts stated that the Staff believes that Duke Power Company failed to take reasonable steps in the case of the Oconee Unit No. 1, Outage No. 3 commencing on May 25, 1992 and lasting 333.7 hours. According to witness Watts, this outage resulted directly from inadequate communication by Duke Power personnel of vendor provided information. The vendor, Westinghouse, supplied information on the design change to a Reactor Coolant Pump (RCP) seal to all three Duke Power nuclear stations. This information was not adequately communicated at the Oconee Station, thus preventing the removal of the obsolete seals from stock and preventing the appropriate revision to maintenance procedures. The obsolete seals were subsequently installed on August 9, 1991, by way of regular maintenance during the refueling outage followed by noticeable degraded performance on May 13, 1992 and unit shut down on May 25, 1992. These unreasonable actions led to additional fuel expenses of $786,134 on a S.C. Retail basis. The excess fuel expenses were calculated by taking the difference

1. Staff recommended that the refueling outages at Catawba Unit No. 1 and Oconee Unit No. 3 be carried over for review during the Company's Spring, 1993 fuel proceeding due to Staff's lack of time to appropriately review the outages before the instant hearing.

between average coal costs and the nuclear unit fuel cost for the month; times the down time hours; times Duke Power's ownership capacity; times a projected 85% capacity factor; and multiplied by the latest approved South Carolina retail allocation factor for KWH sales of .280244. Testimony of Watts, pp. 4-5; Hearing Exhibit No. 3.

MCGUIRE UNIT 1

16. Commission Staff witness Walsh testified to the outage at McGuire Unit No. 1. On June 25, 1992, Instrument and Electrical (I&E) technicians were performing preventive maintenance and cleaning up electrical equipment. The technician began performing various procedures which included the replacement of burned out light bulbs. A technician inadvertently loosened the cover on the ground return fuse thinking that it was a light lens cover. When the cover was loosened, a general warning light came on. The technician immediately tightened the fuse cover. The retightening of the fuse cover resulted in the fuse making contact which generated a reactor trip. The technician failed to take appropriate steps which could have cleared the general warning light without generating a reactor trip signal. Staff additionally determined that management was deficient in scheduling the activity at an inappropriate time. Had the procedure been scheduled during a prior outage, it could have been performed without risk of tripping the unit. Staff concluded this event was the result of inappropriate personnel action and management deficiency. These actions resulted in additional fuel expenses of $60,236 on a South

Carolina jurisdictional basis. Testimony of Walsh, pp. 3-5; Hearing Exhibit No. 4.

17. Neither witness Watts nor Walsh recommended that the excess fuel expenses discussed in their testimony be disallowed. Both witnesses considered the Company's fuel costs in light of S.C. Code Ann.,§58-27-865(E)(Cum. Supp. 1991). In the witnesses' review of the statutory considerations, it was their opinion that Duke's equivalent availability of its base load fossil units exceeded 98% for a majority of the months of April through September; its nuclear units achieved a 78% capacity factor for the twelve months ending September 30, 1992 compared to the NERC average of 73% for the year 1991 for pressurized water reactor units; and approximately 49% to 84% of the Company's electric generation was produced by Duke's nuclear units which represents approximately 35% of the Company's installed plant capacity. In light of those positive considerations, the witnesses did not recommend any disallowance of excess fuel costs.

CONCLUSIONS OF LAW

1. Pursuant to S.C. Code Ann.,§58-27-865(A)(Cum. Supp. 1991), each electrical utility must submit to the Commission its estimated fuel costs for the next six (6) months. Following an investigation of these estimates and after a public hearing, the Commission directs each electrical utility "to place in effect in its base rate an amount designed to recover, during the succeeding six months, the fuel costs determined by the Commission to be appropriate for that period, adjusted for the over-recovery or

under-recovery from the preceding six-month period." Id.

2. S.C. Code Ann., Section 58-27-865(F)(Cum. Supp. 1991) requires the Commission to allow electrical utilities to recover "all their prudently incurred fuel costs... in a manner that tends to assure public confidence and minimize abrupt changes in charges to consumers."

3. S.C. Code Ann., Section 58-27-865(E)(Cum. Supp. 1991) specifies as follows:

> The Commission shall disallow recovery of any fuel costs that it finds without just cause to be the result of failure of the utility to make every reasonable effort to minimize fuel costs or any decision of the utility resulting in unreasonable fuel costs, giving due regard to reliability of service, economical generation mix, generating experience of comparable facilities, and minimization of the total cost of providing service.

4. As stated by the Supreme Court in Hamm v. South Carolina Public Service Commission, 291 S.C. 178, 352 S.E.2d 476, 478 (1987), Section 58-27-865(E) requires the Commission "to evaluate the conduct of the utility in making the decisions which resulted in the higher fuel costs. If the utility has acted unreasonably, and higher fuel costs are incurred as a result, the utility should not be permitted to pass along the higher fuel costs to its customers." "[T]he rule does not require the utility to show that its conduct was free from human error; rather it must show it took reasonable steps to safeguard against error." Id. at 478, citing Virginia Electric and Power Co. v. The Division of Consumer Council, 220 Va. 930, 265 S.E.2d 697 (1980).

5. The Commission recognizes that Section 58-27-865(E)

provides it with the authority to consider the electrical utility's reliability of service, its economical generation mix, the generating experience of comparable facilities, and its minimization of the total cost of providing service in determining to disallow the recovery of any fuel costs.

6. The major advantage of producing electricity by nuclear power is the relatively low fuel costs for nuclear fuel generating facilities. The cost of generation of electricity is generally composed of costs such as capital, interest, taxes, insurance, operating and maintenance (O&M) costs, and fuel costs. For fossil fueled plants, the cost of the fuel is a larger portion of the total cost to generate electricity. For nuclear power plants, while the capital and O&M costs are higher compared to fossil fueled plants, the fuel costs are comparatively low. Thus, if the electricity generated by nuclear plants must be replaced by electricity from a coal or gas fired plant, the Company incurs higher fuel costs. This difference between the fuel costs to generate a quantity of electricity by fossil fuel and the fuel costs to generate the electricity by nuclear fuel is the excess replacement fuel cost.

7. The Commission finds that for the period under review, Duke's overall plant performance was superior. Accordingly, even assuming that negligent actions on the part of Duke caused the Oconee and McGuire outages, the Commission concludes that it would be improper to prohibit the Company from recovering its fuel costs associated with the outages.

8. The Commission concludes that its decision to allow Duke to recover these costs is supported by the substantial evidence of record. The only witnesses who testified at the hearing have stated that the Oconee and McGuire outages were caused by unreasonable actions of the Company, but also recommended that the Commission allow recovery of the associated fuel costs. These witnesses cited the Commission's authority to give "due regard" to the four statutory objectives and explained their consideration of these objectives.

9. In further support of its conclusion not to disallow the fuel costs for the two outages, the Commission has compared Duke's generating experience to other comparable facilities. Duke's nuclear units achieved a 78% capacity factor for the twelve months ending September 30, 1992 compared to the NERC average of 73% for the year 1991 for pressurized water reactor units. Duke's equivalent availability of its base load fossil units exceeded 98% for a majority of the months of April through September and approximately 49% to 84% of the Company's electric generation was produced by Duke's nuclear units which represent approximately 35% of the Company's installed plant capacity. The Commission has determined that Duke Power produced electric generation in such a manner which reduced the fuel costs for its customers.

10. In regard to the objective of minimizing the total costs of providing service, the Commission recognizes that Duke had projected that its cost for fuel for the last period under review would produce an under-recovery of $6,834,494 at November 1992. In

actuality, Duke collected approximately $11,776,578 more than it had projected. The Commission attributes Duke's additional over-collection to the fact that its energy costs were less because it nuclear plants produced a major portion of the Company's electric generation.

11. After considering the directives of §58-27-865(A) and (F) which require the Commission to place in effect a base fuel cost which allows the Company to recover its fuel costs for the next six months adjusted for the over-recovery or under-recovery from the preceding six month period, in a manner which assures public confidence and minimizes abrupt changes in charges, the Commission has determined that the appropriate base fuel factor for December 1992 through May 1993 is 0.950¢/KWH. The Commission finds that a 0.950¢ fuel component will allow Duke to recover its projected fuel costs and, at the same time, prevent abrupt changes in charges to Duke's customers.

12. The Commission has determined that Staff's request to carry over the examination of the outages at Catawba Unit No. 1 and Oconee Unit No. 3 until the Company's Spring, 1993 fuel proceeding is granted.

IT IS THEREFORE ORDERED THAT:

1. The base fuel factor for the period December, 1992 through May, 1993 is set at 0.950¢/KWH.

2. Within ten (10) days of the date of this Order, Duke Power Company shall file with the Commission, rate schedules designed to incorporate the findings herein, and an adjustment for fuel costs as demonstrated by Appendix A.

3. That the Company comply with the notice requirements set forth in S.C. Code Ann.,§58-27-865(A) (Cum. Supp. 1991).

4. That the Company continue to file the monthly reports previously required.

5. That the Company account monthly to the Commission for the differences between the recovery of fuel costs through base rates and the actual fuel costs experienced by booking the difference to unbilled revenues with a corresponding deferred debit or credit.

6. That the Company submit monthly reports to the Commission of fuel cost and scheduled and unscheduled outages of generating units with a capacity of 100 MW or greater.

7. That the Catawba Unit 1 and Oconee Unit 3 outages will be reviewed in the Company's Spring, 1993 fuel proceeding.

8. That this Order shall remain in full force and effect until further Order of the Commission.

BY ORDER OF THE COMMISSION:

Chairman

ATTEST:

Deputy Executive Director

(SEAL)

DUKE POWER COMPANY
Adjustment for Fuel Costs

APPLICABILITY

This adjustment is applicable to and is a part of the Utility's South Carolina retail electric rate schedules.

The Public Service Commission has determined that the costs of fuel in an amount to the nearest one-thousandth of a cent, as determined by the following formula, will be included in the base rates to the extent determined reasonable and proper by the Commission for the succeeding six months or shorter period:

$$F = \frac{E}{S} + \frac{G}{S_1}$$

Where:

F= Fuel cost per Kilowatt-hour included in base rate, rounded to the nearest one-thousandth of a cent.

E= Total projected system fuel costs:

(A) Fuel consumed in the Utility's own plants and the Utility's share of fuel consumed in jointly owned or leased plants. The cost of fossil fuel shall include no items other than those listed in Account 151 of the Commission's Uniform System of Accounts for Public Utilities and Licensees. The cost of nuclear fuel shall be that as shown in Account 518 excluding rental payments on leased nuclear fuel and except that, if Account 518 also contains any expense for fossil fuel which has already been included in the cost of fossil fuel, it shall be deducted from this account.

PLUS

(B) Purchased power fuel costs such as those incurred in unit power and Limited Term power purchases where the fuel costs associated with energy purchased are identifiable and are identified in the billing statement.

PLUS

(C) Interchange power fuel costs such as Short Term, Economy, and other where the energy is purchased on economic dispatch basis.

Energy receipts that do not involve money payments such as Diversity energy and payback of storage energy are not defined as purchased or interchange power relative to this fuel calculation.

MINUS

(D) The cost of fuel recovered through intersystem sales including the fuel costs related to economy energy sales and other energy sold on an economic dispatch basis.

Energy deliveries that do not involve billing transactions such as Diversity energy and payback of storage are not defined as sales relative to this fuel calculation.

S = Projected system kilowatt-hour sales excluding any intersystem sales.

G = Cumulative difference between jurisdictional fuel revenues billed and fuel expenses at the end of the month preceding the projected period utilized in E and S.

S_1 = Projected jurisdictional kilowatt-hour sales for the period covered by the fuel costs included in E.

The appropriate revenue related tax factor is to be included in these calculations.

The fuel cost (F) as determined by Public Service Commission of South Carolina Order No. 92-1011 for the period December 1992 through May 1993 is .9500 cents per kilowatt-hour.